

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540
Activity Number: PER20070001
Proposed Permit Number: 0840-00128-V2**

I. APPLICANT

Company:

Louisiana State University
229 Facility Services Bldg.
Baton Rouge, Louisiana 70803

Facility:

Louisiana State University - LSU
Baton Rouge, East Baton Rouge Parish, Louisiana
Latitude 30° 25' 02", Longitude 91° 10' 35"

II. FACILITY AND CURRENT PERMIT STATUS

LSU operates a cogeneration unit and several boilers to generate steam and electricity for its academic activities. LSU requests a Part 70 operating permit renewal.

Louisiana State University - LSU is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within LSU. These include:

Permit No.	Unit or Source	Date Issued
0840-00128-01	Entire Facility	09/10/1991
0840-00128-V0	Entire Facility	12/10/2002
0840-00128-V1	Central Plant Boiler No. 4	07/28/2005
	Central Plant Boiler No. 6	
	Veterinary Medicine Boiler No. 1	
	Veterinary Medicine Boiler No. 2	
	Highland Utility Boiler No. 1	
	Turbine & Waste Heat Boiler	
	Combined Heat and Power Turbine System	
	Black Start Generator	
	Powerhouse Cooling Tower No. 6	
	Cooling Tower No. 8	
	Vet Med Cooling Tower	
	University Stores Gasoline Tank No. 1	

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540**

Permit No.	Unit or Source	Date Issued
0840-00128-V1	University Stores Gasoline Tank No. 2	07/28/2005
	Golf Course Gasoline Tank	
	Frey Center Generator	

This application for a Part 70 permit renewal/modification includes the following sources:

Permit No.	Unit or Source	Date Issued
0840-00128-V2	Central Plant Boiler No. 4	Pending
	Central Plant Boiler No. 6	
	Veterinary Medicine Boiler No. 1	
	Veterinary Medicine Boiler No. 2	
	Highland Utility Boiler No. 1	
	Turbine & Waste Heat Boiler	
	Combined Heat and Power Turbine System	
	Black Start Generator	
	Powerhouse Cooling Tower No. 6	
	Cooling Tower No. 8	
	Vet Med Cooling Tower	
	University Stores Gasoline Tank No. 1	
	University Stores Gasoline Tank No. 2	
	Golf Course Gasoline Tank	
	Frey Center Generator	
	Veterinary Medicine Incinerator	
	Veterinary Medicine Generator	
	PMAC Generator	

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application was submitted on June 13, 2007 requesting a Part 70 operating permit renewal for LSU. Additional information dated July 27, 2007 and May 16, 2008 was also submitted.

Project

With this renewal/modification, LSU proposes to add two emergency standby generators and dismantle the research rotary kiln.

Proposed Permit

Permit 0840-00128-V2 will be the renewal of Part 70 operating permit 0840-00128-V1 for LSU.

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540**

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM ₁₀	29.41	30.03	+0.62
SO ₂	4.27	5.17	+0.90
NO _x	216.00	220.86	+4.86
CO	273.88	274.74	+0.86
VOC	10.96	11.24	+0.28

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

LSU is subject to the following NSPS regulations:

- NSPS – Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units for Which Construction is Commenced June 19, 1984
- NSPS – Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units for Which Construction is Commenced June 9, 1989
- NSPS – Subpart GG - Standards of Performance for Stationary Gas Turbines

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source

ID No:	Requirement	Notes
EQT 29	LAC 33:III.Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	NSPS Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. [40 CFR 60.40c]	DOES NOT APPLY. Boiler was constructed prior to 1989.
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit has maximum rated capacity less than 40 MM Btu/hr. [LAC 33:III.2201.C.1]
EQT 30	LAC 33:III.Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	NSPS Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. [40 CFR 60.40c]	DOES NOT APPLY. Boiler was constructed prior to 1989.

Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source		
ID No:	Requirement	Notes
EQT 30	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit has maximum rated capacity less than 40 MM Btu/hr. [LAC 33:III.2201.C.1]
EQT 27	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit has maximum rated capacity less than 40 MM Btu/hr. [LAC 33:III.2201.C.1]
EQT 28	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit has maximum rated capacity less than 40 MM Btu/hr. [LAC 33:III.2201.C.1]
EQT 39	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Turbine has megawatt rating (4.065 MW) based on heat input less than 5 MW. Duct burner operates less than 400 hours during ozone season. [LAC 33:III.2201.C.2 & 6]
EQT 40	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Duct Burner Only. Duct burner operates less than 400 hours during ozone season. [LAC 33:III.2201.C.6]
	Compliance Assurance Monitoring (CAM). [40 CFR 64]	EXEMPT. Unit is required to continuously monitor the water to fuel ratio and fuel consumption per 40 CFR 60.334(a). [40 CFR 60.2(b)(vi)]
EQT 41	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit operates less than 400 hours during ozone season. [LAC 33:III.2201.C.6]
EQT 26	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	EXEMPT. Unit emits less than 250 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit operates less than 400 hours during ozone season. [LAC 33:III.2201.C.6]
	NSPS Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. [40 CFR 60.40b]	DOES NOT APPLY. Boiler was constructed prior to 1984.
EQT 31	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	DOES NOT APPLY. Unit emits less than 5 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit uses diesel fuel. [LAC 33:III.2201.C.14]
EQT 32	LAC 33:III Chapter 15 – Emission Standards for Sulfur Dioxide	DOES NOT APPLY. Unit emits less than 5 tons of SO ₂ per year. [LAC 33:III.1503.C and 1511.A]
EQT 67	LAC 33:III Chapter 22 – Control of Emissions of Nitrogen Oxides (NO _x)	EXEMPT. Unit uses diesel fuel. [LAC 33:III.2201.C.14]
EQT 68		

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540**

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source		
ID No:	Requirement	Notes
EQT 33	NESHAP Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers	DOES NOT APPLY. No chromium based treatment chemicals are used.
EQT 34	NESHAP Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers	DOES NOT APPLY. No chromium based treatment chemicals are used.
EQT 35	NESHAP Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers	DOES NOT APPLY. No chromium based treatment chemicals are used.

Prevention of Significant Deterioration/Nonattainment Review

A PSD review is not required for this renewal/modification.

Streamlined Equipment Leak Monitoring Program

A streamlined equipment leak program is not required.

MACT Requirements

LSU is not a major source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51.

Air Quality Analysis

Emissions associated with the proposed Part 70 operating permit renewal were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540**

V. PERMIT SHIELD

A permit shield per 40 CFR 60.6(f) and LAC 33:III.507.I was not requested in the permit application.

VI. PERIODIC MONITORING

A federally enforceable condition requires LSU to limit the consumption of Natural Gas Fuel ≤ 116.51 MM scf/yr, EQT029, EPN HU 1 Highland Utility Boiler No. 1. Noncompliance with this limitation is a reportable violation of the permit. Notify the Office of Environmental Compliance, Enforcement Division if Natural Gas Fuel Consumption exceeds the maximum listed in this specific condition for any twelve consecutive month period. [LAC 33:III.501.C.6]

A federally enforceable condition requires LSU to limit the total consumption of Natural Gas Fuel ≤ 189.22 MM scf/yr for EQT027, Veterinary Medicine Boiler No. 1, and EQT028, Veterinary Medicine Boiler No. 2. Noncompliance with this limitation is a reportable violation of the permit. Notify the Office of Environmental Compliance, Enforcement Division if Natural Gas Fuel Consumption exceeds the maximum listed in this specific condition for any twelve consecutive month period. [LAC 33:III.501.C.6]

A federally enforceable condition requires LSU to limit the total consumption of Natural Gas Fuel ≤ 2073.59 MM scf/yr for Turbine & Waste Heat Boiler (EQT 39), the Combined Heat & Power Turbine System (EQT 040), and Central Plant Boiler No. 4 (EQT 041). Noncompliance with this limitation is a reportable violation of the permit. Notify the Office of Environmental Compliance, Enforcement Division if Natural Gas Fuel Consumption exceeds the maximum listed in this specific condition for any twelve consecutive month period. [LAC 33:III.501.C.6]

Permittee shall monitor the steam or water to fuel ratio that is continuously monitored as described in 40 CFR 60.334(a), (d) or (f) for EQT0040, 1-02 Combined Heat and Power Turbine system. Permittee shall utilize the parameter monitoring plan which explains the procedures used to document proper operation of the NO_x emission controls. Include the parameter(s) monitored and the acceptable range(s) of the parameter(s) as well as the basis for designating the parameter(s) and acceptable range(s). Include any supplemental data such as engineering analyses, design specifications, manufacturer's recommendations and other relevant information in the monitoring plan. Subpart GG

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540**

Hydrogen Disulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

**Louisiana State University
Baton Rouge, East Baton Rouge Parish, Louisiana
Agency Interest Number: 5540**

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – Sec Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.